

**Draft Comments & Responses on
Solid Waste Rule Revision Strawman (draft language)**

- 1. A list of “fatal flaws” (list of unsuitable characteristics), is inappropriate because this ignores well established principles of “environmental geotechnics”**

Response: Section 260.205, RSMO, established the two-phase PSI/DSI process for the purpose of screening out sites for consideration as a landfill on the basis of geologic and hydrologic characteristics. Therefore, providing clarity to the meaning of “geologic and hydrologic characteristics”, through the establishment of a list of unsuitable characteristics, is appropriate.

- 2. Geologic fatal flaws that are more stringent than federal Subtitle D regulations will invite litigation.**

Response: Subtitle D does not prevent approved states, such as Missouri, from enacting their own criteria regarding the suitability of proposed landfill locations.

- 3. Applicants should be allowed to demonstrate satisfactory performance with respect to the list of unsuitable characteristics.**

Response: See response #1.

- 4. The purpose of this rulemaking group has veered away from its original objective. The purpose of the stakeholder group is to develop a list of geologic and hydrologic characteristics that render some sites unsuitable, and the group should stay focused on that objective.**

Response: The department agrees that the primary focus of the rulemaking effort is to clarify the conditions that render sites suitable or unsuitable from a geologic and hydrologic standpoint.

- 5. Siting qualifications should be separated from landfill design. Allowing design considerations to factor into site selection will weaken the existing rule.**

Response: The department agrees. The enabling statute, Section 260.205, RSMO, does not state that engineering can or should be factored into the geologic and hydrologic site suitability decision.

- 6. The design life of a landfill is shorter than the harmful effects of leachate. Bad sites will eventually fail, and because we know which sites are bad, we should not allow them to be developed in the first place.**

Response: The department agrees that the long-term impact of landfills on the environment is an important consideration in siting decisions. The rulemaking process will allow for clarification of the characteristics of a natural setting that has severe limitations.

- 7. The 360 gallon per day cutoff for non-potable groundwater (10 CSR 80-2.015(1)(A)3.B) is too high. The level should be set at 125 gpd.**

Response: This well production number is only being used in this rulemaking as a means of establishing which sites appear to be well-suited for a landfill at the preliminary site investigation phase. Upon a detailed site investigation, the site could still be found to be unsuitable. Setting

the production number too low will result in very few sites being granted a 10 CSR 80-2.015(1)(A)3 preliminary site investigation approval. This would undermine the intent of this provision, which is to provide an incentive for applicants to select sites with favorable geologic and hydrologic characteristics.

8. **Some believe that the terms and definitions are too broad and too vague, and the industry wants quantitative amounts. Strong, protective qualifiers should be included any time quantitative parameters are established.**

Response: The department understands this concern. The department welcomes suggested language; however, at this time no such quantitative definitions have been proposed.

9. **Three commenters agreed with the list of unsuitable characteristics as proposed in the strawman. They believe that sites with these characteristics should not be allowed to proceed any further in the permitting process. One person cautioned that the proposed wording leaves too much room for argument, and that the rule must be detailed enough so that when bad conditions exist, the department can issue a denial on firm grounds and not be subject to appeal.**

Response: The department agrees with this comment. The intent of this rulemaking is to provide sufficient detail on siting criteria for a proposed landfill.

10. **The fatal flaw requiring the base of the landfill to be higher than the seasonal high water table is reasonable. This person also disagreed with other stakeholders who believe the PSI phase is too early in the process to make this determination.**

Response: The department agrees that landfills should be constructed above the seasonal high water table, and has revised the strawman (draft language) to require the applicant to provide information regarding the approximate depth of the landfill at the time of the PSI request.

11. **The fatal flaw regarding karst and other features that provide a geo/hydrological connection to an aquifer should include non-potable water sources that are considered habitat for endangered species.**

Response: The revised strawman (draft language) incorporates this comment.

12. **Any weakening of the fatal flaw pertaining to permeable geologic units, joints, fractures or voids that provide a subsurface pathway ought to consider the Renfro Landfill in Stone County. That landfill generated gas that migrated into houses, creating a dangerous condition.**

Response: The department agrees that limiting risk to people and the environment from gas migration is a serious consideration in the siting of landfills

13. **What data was used to determine that a 200 foot zone around a Holocene fault is adequate?**

Response: This language is derived from Federal Subtitle D regulations. Note that the current strawman (draft language) removes this buffer zone and only makes this a fatal flaw if there is an active fault directly beneath the footprint of the landfill (i.e., no buffer). This does not eliminate the Subtitle D requirement to demonstrate how a Holocene fault within 200 feet would impact the landfill (which is done during the design phase).

14. Electric utility coal-fired power plants are almost always located in floodplains and need to dispose of large volumes of fly ash, scrubber sludge and bottom ash in adjacent landfills as a matter of practicality. The fatal flaw requiring a geohydrologic barrier would prevent future utility waste landfills from being sited in floodplains. Utility wastes present a low potential risk and should be exempted from this fatal flaw.

Response: The department believes this is a topic that warrants discussion among the full stakeholder group, and has placed this on the agenda for the November 8, 2005 meeting

15. Two commenters proposed the following additions to the unsuitable characteristics list:

- A. Sites located in seismic impact zones. One commenter suggested defining this as zones with an intensity of X or XI according to SEMA.
- B. Sites that would be located in wetlands
- C. Sites that would be located in floodplain. One commenter defined this as a 100-year floodplain that restricts flow
- D. Sites located near bodies of water. One commenter stated that this should be within ¼ mile of a stream. Another commenter said that this should be any site located within one mile of a river, lake, creek or any Missouri stream
- E. Sites where the aquifer is the only source of water for a community
- F. Sites with unstable conditions, including but not limited to, poor foundation conditions, areas susceptible to mass movement and karst regions
- G. Karst conditions including faults, fractures, sinkholes, caves and underground streams
- H. Sites located below the water table
- I. Sites within 5 miles of a high hazard dam
- J. Sites previously used as a mining operation
- K. Sites where law enforcement authorities have determined that the roadways leading to and from the site are inadequate to handle traffic flow.
- L. Sites with insufficient soil to provide 6 inches of daily cover
- M. Sites proposed by developers who are habitual violators of Missouri, United States or any other country's laws.

Response:

- A. Subtitle D requires applicants address seismic impact during the design phase.
- B. Existing Missouri solid waste regulations (design and operation regs) impose a large number of requirements and restrictions on any proposed landfill that would impact wetlands.
- C. Subtitle D requires applicants address potential flooding from a 100-year event during the design phase.
- D. The department agrees that potential impact on surface water bodies should be evaluated during the investigation of proposed sites, but disagrees that this should be a fatal flaw. Proximity to a body of water is not enough to determine if liner failure would result in an impact to the body of water, nor if that impact would result in a significant risk to human health or the environment. The geology and hydrology of the site would need to be fully defined and the potential impact on surface water bodies evaluated.
- E. The current list of unsuitable characteristics should include a sufficient description of unfavorable geologic and hydrologic conditions to adequately protect groundwater resources.
- F. Most of the items cited here are already covered by the proposed list of unsuitable characteristics. The only item not specifically addressed is mass movement. The division believes that issues regarding mass movement should be adequately handled during the design phase.
- G. This item is addressed under the proposed list of unsuitable characteristics.
- H. This item is addressed under the proposed list of unsuitable characteristics.

- I. The presence of a high hazard dam within 5 miles of a landfill does not impact geologic or hydrologic suitability. The presence of a landfill below a proposed dam will be considered in the operating permit for the dam.
- J. Underground mining activities could impact geologic or hydrologic suitability of a site. The proposed strawman (draft language) addresses this condition through a collapse potential evaluation and consideration of mine voids acting as conduits for the movement of contaminants.
- K. This is not a geologic or hydrologic siting issue and therefore is beyond the scope of this rulemaking.
- L. Assuring the availability of adequate daily cover is a design or operation issue, not a siting issue.
- M. This is not a geologic or hydrologic siting issue. However, pursuant to 10 CSR 80-2.070, the violation history of applicants must be taken into consideration before a solid waste construction permit can be issued.

16. Anything that could stop a landfill from being permitted should be identified at the beginning of the process in order to prevent time and money from being wasted.

Additional items that should be addressed at the beginning of the process include:

- A. Proposed landfills located within specified distances of Federal Aviation Administration regulated airports.
- B. Habitual violators
- C. Local compliance

Response: The statute does not provide for these types of issues to be taken into consideration during the PSI and DSI phases.

17. The rulemaking process is overly weighted by perceptions rather than science. DGLS should prepare a Regulatory Impact Report (RIR) now, rather than later. By answering the 13 questions in the RIR, the state would properly frame the proposed rule.

Response: The department agrees that the RIR is an important document that answers questions relating to the proposed rulemaking. However, it is premature to draft an RIR because final draft rule language has not yet been prepared. We are still in a preliminary discussion through a stakeholder process. Once a final draft rule is developed, the division will immediately begin preparation of the RIR.

18. The term “base of the proposed solid waste disposal area” should be defined. The use of fill material creates a potential man-made karst condition. The rule should state that “if the site is below the water table, the site is unsuitable.”

Response: Potential new definitions will be discussed at the November 8, 2005 stakeholder meeting, and this term will be opened up for discussion at that time. The department does not understand the concern over the use of fill material.

19. What scientific method will be used to determine what type, if any, geohydrologic connections or barriers exist between the site and the aquifer? How do you know what the barriers consist of? If the area is karst, how can a barrier exist between the landfill and an aquifer?

Response: At the preliminary investigation phase, department staff utilize all available geological resources to evaluate the geological and hydrological conditions at sites. This may include such data sources as geologic maps, well logs, monitoring well data, rock core and any other information obtained on or in the vicinity of the site. Data quality and availability can vary significantly from one location to another. If the site progresses to a DSI phase, geohydrologic connections and natural barriers will be further defined on the proposed site.

20. The DGLS division director should not consider appeals of PSI disapprovals, because this weakens the list of unsuitable characteristics concept. Appeals instead should be made to residents who live in the vicinity of the proposed landfill. In order for the appeal to be successful, 100% of the residents and property owners within a 15-mile radius would need to give written agreement. Should one resident not agree, the site would be removed from consideration. Even if the site succeeds in this appeals process, the site could still be denied upon a detailed site investigation.

Response: The statute does not provide for an appeals process that includes residents who live in the vicinity of a proposed landfill. However, the various public events during all phases of the landfill permitting process allow local residents the opportunity to voice concerns and ask questions that the department will address.

21. The language proposed in 10 CSR 80-2.015(2)(A)2 is strongly opposed. Allowing for engineering conflicts with the “fatal flaws” (unsuitable characteristics) concept and allows room for argument regarding the suitability of sites. Any site that must be engineered is unsuitable because attempts to alter nature do not work and result in disaster.

Response: The proposed language defines a set of conditions where a site will be deemed unsuitable because of a severe limitation. It also recognizes that there are sites that may have geological and hydrological limitations that can be addressed by engineering.

22. The third sentence in paragraph 10 CSR 80-2.015(1)(E) should be revised to state “the applicant and GSP will coordinate a time when drilling, testing or field investigations are to take place. GSP department personnel will be present on-site during the investigations. GSP department personnel present during the investigations will sign a statement verifying that all investigations were conducted in accordance with Appendix 1. The signed statement will be placed in the applicant’s file.”

Response: The department strives to have staff on-site observing field investigative activities as much as practicable during detailed site investigations. Due to staffing limitations and scheduling difficulties, it is not possible to have staff on-site for all fieldwork. Nonetheless, staff verify that all work outlined in the DSI work plan is carried out as planned.

23. Appendix 1 should be not be a guidance document, but instead should be mandatory requirements for conducting a detailed site investigation.

Response: Appendix 1 is a set of minimum guidelines for conducting detailed site investigations. But it is not a set of inflexible, prescriptive requirements. Appendix 1 allows DGLS staff to approve “alternative techniques and procedures” as may be appropriate based on specific circumstances.

24. 10 CSR 80-2.015(2)(B), reasons for disapproval, should include the following:

- D. Applicant failed to submit a complete application
- E. Applicant is a habitual violator

Response: The first proposed addition, applicant failed to submit a complete application, already exists in the rules. It is found at 10 CSR 80-2.015(2)(B)3 “The characterization report is not adequate to show that the site has suitable geologic and hydrologic conditions ...” The second proposed addition is not provided by the statute.

24. Missouri currently is not strict enough in pursuing violations against environmental violators. Missouri should strengthen its enforcement and assess severe penalties.

This commenter offered numerous specific recommendations for changing 10 CSR 80-2.040 and 10 CSR 80-2.070 to increase penalties, require the collection of information about violations from other states and other changes.

Response: These are not geologic or hydrologic siting issues and therefore are beyond the scope of this rulemaking.

25. DNR should identify those areas of Missouri that have conditions that are unsuitable for the development of landfills. These areas should be declared “off-limits”, and environmentally safe alternatives for waste disposal should be pursued instead.

Response: Creating maps that identify suitable and unsuitable areas of the state for siting landfills can be done. This type of map does not currently exist and would not eliminate the need to conduct a site-specific investigation of a proposed landfill site. The maps could provide valuable guidance to applicants seeking an expedited permitting process. They could also serve to direct applicants away from areas with severe limitations.